

ABSTRACT

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5 A residential multi-line ADSL modem (12) and network (10) whereby the multi-line
ADSL modem (12) has connections to several ADSL modems (14) at a central office (CO) (16)
through a master loop (18), shared loops (18, 20), and/or broadcast loops (62). The master loop
(18) provides the basic connection between the multi-line ADSL modem (12) and the CO
modem (H) at the central office (16) while maintaining regular telephone service. The shared
loops allow the multi-line ADSL modem to share the transmission capacity with other residential
10 modems. The multi-line ADSL modem is able to receive broadcast data from the central office
where several loops are configured as a broadcast loop for downstream transmission only, but
which can also be configured for upstream communication transmission only or in combination
with downstream transmission to provide bi-directional broadband communications.